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(72) Inventors; and

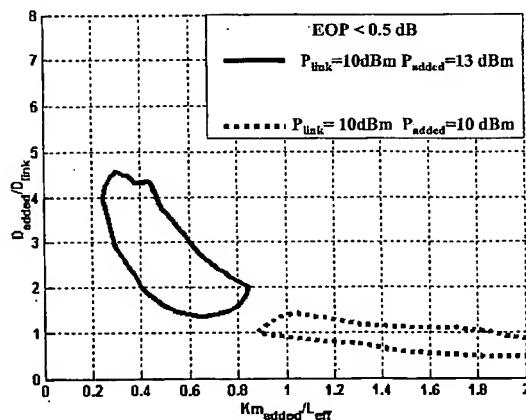
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(54) Title: OPTICAL TRANSMISSION SYSTEM USING AN OPTICAL PHASE CONJUGATION DEVICE



WO 2004/057779 A1

(57) Abstract: An optical system (10) comprises an optical fiber path (12) suitable for propagating an optical signal at least in a first direction, and a plurality M of optical line amplifiers (13<sup>1</sup>...13<sup>6</sup>), disposed along said optical fiber path (12), so as to divide said optical fiber path in N spans of optical fiber (14<sup>1</sup>...14<sup>5</sup>). The spans of optical fiber comprise at least one transmission optical fiber having an effective length  $L_{\text{eff}}$ . An optical phase conjugation device (15) is associated to one of the amplifiers of said plurality of amplifiers, and is disposed in combination with an optical fiber length (16) having the same sign of dispersion of said transmission optical fiber and a higher dispersion coefficient at a wavelength of said optical signal. The additional accumulated dispersion introduced by the optical fiber length is nearly equal to the dispersion accumulated in an effective length  $L_{\text{eff}}$  of transmission fiber. A further optical amplifier (19) is associated to the optical fiber length (16).

## INTERNATIONAL SEARCH REPORT

International Application No  
PCT/EP 02/14730A. CLASSIFICATION OF SUBJECT MATTER  
IPC 7 H04B10/18

According to International Patent Classification (IPC) or to both national classification and IPC

## B. FIELDS SEARCHED

Minimum documentation searched (classification system followed by classification symbols)  
IPC 7 H04B

Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched

Electronic data base consulted during the international search (name of data base and, where practical, search terms used)

EPO-Internal, WPI Data, PAJ

## C. DOCUMENTS CONSIDERED TO BE RELEVANT

Category °	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	WO 99 05805 A (BRITISH TELECOMM ;MARCENAC DOMINIQUE DAVID (GB)) 4 February 1999 (1999-02-04) cited in the application page 4, line 21 -page 7, line 4 page 7, line 32 -page 9, line 29 page 12, line 2 - line 7 page 17, line 1 -page 18, line 24 page 20, line 4 -page 21, line 30 figures 1,4,6,7 -----	1-13
A	US 6 175 435 B1 (WATANABE SHIGEKI) 16 January 2001 (2001-01-16) cited in the application column 8, line 64 -column 11, line 26 column 13, line 7 -column 14, line 13 figures 4-9 -----	1-13

 Further documents are listed in the continuation of box C.

Patent family members are listed in annex.

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**INTERNATIONAL SEARCH REPORT**

Information on patent family members

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Patent document cited in search report	Publication date		Patent family member(s)	Publication date
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